Simple Suppers

Pennywitt J.S., Kennel J.A., Murray R.D., Gunther C.W.
Department of Nutrition, The Ohio State University, Columbus, Ohio 43210

Abstract

Eating behaviors that fuel childhood obesity are known to be established early in life and become difficult to change thereafter. Parents play a major role in shaping the food choices and eating behaviors of their young children. There is emerging evidence that demonstrates apositive relationship between family meals and child diet quality. The primary aim of this study was to develop and pilot test a blended nutrition education and cooking program for parents and young children designed to help families establish regular meal time and improve overall diet quality.

To achieve this goal, a needs assessment survey was conducted among parents (n=16) with young children enrolled at the Schoenbaum Family Center (SFC). Most (88%) parents reported that they feel it is very important to eat family meals together. Almost all (94%) indicated multiple barriers to establishing family meals. When asked what topics they would like to see addressed in a nutrition education and cooking program for families, they indicated interest in learning: ways to prepare quick, healthy, affordable meals; how to involve their child in meal preparation; and recipes that appeal to children.

Results from this study lead to the design of a nutrition education and cooking program (Simple Suppers)that was: based on existing curricula; aligned with national dietary guidelines; and designed with sensitivity to the needs of parents with young children. The curriculum consisted of seven 90 min sessions that included: nutrition education; family meal preparation; group meal; take-home educational materials; and session evaluation. The program was pilot tested on a monthly basis with families who have children enrolled at SFC. On average, 10 families haveattended the program each month.We expect results from this study to lead to design of a larger scale project to test program efficacy in executing positive food choices and eating behaviors.

Background

The prevalence of childhood obesity is growing at an alarming rate. Rates of obesity have more than doubled among preschool-aged children (2-5 years old) between 1976-1980 and 2007-2008 (Ogden C and Carroll M. 2010). The costs associated with overweight and obesity are vastly detrimental, affecting both the physical and emotional well-being of the child. Childhood obesity increases the risk for adult obesity and negative associated health outcomes, including high blood pressure, high cholesterol, and type 2 diabetes (Daniels SR et al. 2009). Childhood overweight and obesity can also lead to serious harmful psychological effects, including weight-related teasing, social isolation, and depression (Daniels SR et al. 2009).

Eating behaviors that fuel childhood obesity are established early in life and difficult to change thereafter (Reilly JJ. 2008). Studies have shown that food attitudes and preferences are instilled by the time a child reaches kindergarten (Birch LL. 1990). Parents play a major role in shaping the food choices and eating behaviors of their young children (Kral TV and Rauh EM. 2010). To this end, evidence has shown that children mirror the eating habits of the family by age two (Dwyer J et al. 2004). Parent factors, such as role modeling and setting expectations for intake of healthy foods, and making healthy foods available, have been shown to directly impact a child's dietary intake (Savage JS et al. 2007). Thus, in order to reverse the current trends in childhood obesity, early intervention *and* engagement of parents is necessary.

In 2007, the Expert Committee on the Prevention and Intervention of Childhood Obesity established 10 core behaviors associated with a decreased risk for childhood obesity (Barlow SE. 2007). Among other obesity preventing behaviors (e.g.,*limiting* consumption of sugar sweetened beverages, portion sizes, eating out at restaurants, T.V. and screen time, and *encouraging* the practices of eating breakfast daily and increased consumption of fruits and vegetables), eating **meals as a family** was emphasized. In older children, research has shown that eating patterns are significantly influenced by the number of evening meals eaten with a parent present (Gillman MW et al. 2000). In another study, adolescents who participated in more than three family meals weekly were significantly less likely to report poor consumption of fruits, vegetables, and dairy foods, and less likely to skip breakfast than those who ate three or less family meals weekly (Videon TM. 2003).

Data indicate that parents face multiple barriers to establishing regular family meal times. For example, a recent study demonstrated that many parents of preschoolers find resentment toward family dinners due to the challenges presented at these meals, including food acceptance, child control, and time and budget limitations (Hoerr S et al. 2005). In addition, many parents lack basic cooking skills and rely on eating out and/or pre-prepared foods in grocery stores (Nutrition Education Network of Washington. 2008). Consequently, family meal time is compromised because parents lack the skills and/or time to invest in preparing healthy meals. Few effortshave been made to design evidence-based nutrition programs that equip parents of young children with the knowledge and skills toovercome these indicated barriers to preparing healthy meals for their families and establishing regular family meal time. Innovative strategies must be developed that support and encourage families to improve the frequency and quality of family meals and,ultimately,the overall diet quality of children for reduced risk of obesity.

Methods

Objective: The primary objective of the current project was to develop and test the feasibility and acceptability of a novel healthy cooking and nutritioneducation program (Simple Suppers, SS) aimed at teaching parents and their preschool-aged childrenhealthy cooking skills and positive eating behaviors.

Study Aims: The first aim of this project was to gain a better understanding of the extent to which parents value the importance of preparing and sharing family meals, as well as the challenges parents with young children face in establishing regular family meal time. The second

aim was to develop and pilot test a nutrition and cooking program for families with preschoolers designed with sensitivity to the needs of parents with young children.

Needs Assessment Survey: A needs assessment survey was conducted among parents with preschoolers to better understand the extent to which parents value the importance of preparing and sharing family meals, as well as the challenges families face in establishing regular family meal time. The survey was conducted in October 2010 between 5:00 and 6:00 pm, which corresponded with the normal parent pick-up time for children enrolled at the Schoenbaum Family Center (SFC). Sixteen parents with young children enrolled at the Schoenbaum Family Center (SFC) participated in this survey study. Parents were asked to report the importance of preparing and eating family meals at home on a 10-point Likert scale, from not important to very important, the challenges faced in preparing and eating family meals at home, and preferred topics in a nutrition and healthy cooking program for families as an open-ended response question.

Program Implementation: Based on the results from this survey, we developed a fun and interactive, hands-on healthy cooking and nutrition program for parents and their preschool-aged children. Seven, 90 minute stand alone sessions were developed and delivered on a monthly basis. Each session included the following components: nutrition education (separate for parents and children);group time (separate for parents(discussion of relevant issues/topics, e.g., picky eaters, meal planning, etc) and child (interactive activities, e.g., taste testing, etc));skill building in cooking;family meal preparation;group meal;take-home educational materials;and session evaluation.

SS was delivered at SFC, an early childhood laboratory school that servesa culturally and economically diverse community of children ages birth to five and their families (http://ehe.osu.edu/admin/schoenbaum/). All parents with children enrolled at SFC wereinvited by SFC day care teachers and administratorsto participate in the SS program (personal invitation, email, and flyers). Parents with infants were offered the option for babysitting.A website was developed to allow parents to gain free access to SS materials and other relevant resources.

Outcomes: Attendance data was collected at the individual and family level at each of the seven sessions. A satisfaction survey was administered to parents after program 1 (beginning), 4 (mid-way), and 7 (end). Parents ranked their level of program satisfaction (4-point Likert scale, from Very Unsatisfied to Very Satisfied). Parents also reported their perception of their child's satisfaction with the program (Liked, Did Not Like, NotSure) (Fulkerson et al. 2008).

Curriculum Development: The conceptual framework for SS was provided by the Social Cognitive Theory (SCT), under which behavior is explained as dynamic, reciprocal interactions between personal factors, environmental factors, and behavior(Bandura A. 1986). In developing the SS curriculum, we drew from two existing evidence-based nutrition curricula (Happy Healthy Preschoolers (HHP) and Expanded Food and Nutrition Education Program (EFNEP)) which have been developed and/or implemented by colleagues at Nationwide Children's Hospital (HHP, Dr. Robert Murray) and Ohio State University (EFNEP, Drs. Joyce McDowell and Mari Carmen Lambea). HHP is a 6 week nutrition education program designed to teach parents of preschoolers the skills to provide their children with good nutrition and physical activity behaviors. Preliminary data has indicated that parents have retained and implemented good dietary practices into their households (Pennywitt JS et al. 2009). EFNEPis a 10-12 week

nutrition education program designed to assist limited-resource audiences with the knowledge, skills, attitudes, and changed behaviors necessary for nutritious diets. Annual data has indicated that graduates have improved their diets, improved their nutrition practices, stretched their food dollars farther, handled food more safely, and increased their physical activity rates (http://www.csrees.usda.gov/nea/food/enfnep).

We employed the "4As: Anchor, Add, Apply, and Away" approach, which has been used in EFNEP and HHP programming. The Anchor section refers to relating the topic to the participant's lives. Each SS lesson opened with an anchor question which allowed participants to share their ideas on the lesson topic within a small group setting. The Add portion consists of providing a new layer of information to the participant's foundation of knowledge. After the anchor question, the SS teachers delivered a brief nutrition lesson on a specific topic. The Apply segment required the learners do something with the information received. The healthy cooking portion of the SS program served as the application piece where participants engaged in preparing/assembling/eating a healthy meal that directly mirrored concepts addressed in the nutrition lesson. The Away piece provided the learners an opportunity to move the information into the future. For this final portion, we assigned the participants a task or achievable goal to complete within the near future.

The nutritional content of the SS menus/recipes and themessaging delivered in the nutrition education lessons werederived from Dietary Guidelines (DG) (http://www.health.gov/dietaryguidelines), My Pyramid (http://www.mypyramid.gov/),and American Pediatric Association Expert Committee Guidelines (ECGs) (Barlow SE. 2007). In addition, the following factors were taken into consideration when developing the meal plans and recipes for the cooking portion of the class: healthiness ($\leq$30% fat contribution, $\geq$1 serving fruits and vegetables), taste, cost, time ($\leq$30 mins), simplicity, acceptability to children, and seasonality.

Results

The needs assessment survey was conducted to determine the extent to which parents value family meals, as well as barriers they face to preparing and eating family meals. The majority of parents (88%) reported they feel it is very important to eat family meals together (Table 1). In addition, an overwhelming majority of parents (94%) reported they face multiple barriers to establishing family meals. Time barriers were reported most often as a significant obstacle parents face in establishing regular family meals. A lack of ideas and difficulty in pleasing the entire family with a single meal included other reported barriers. When asked what topics they would like to see addressed in a nutrition education and cooking program for families, they indicated interest in learning: ways to prepare quick, healthy, affordable meals; how to involve their child in meal preparation; and recipes that appeal to children.

Table 1. Most Parents Rank Eating Family Meals as Very Important and Face Multiple Barriers to Establishing Regular Family Meals (n=16)

	Not Important			Somewhat Important				Very Important		
Importance of Family Meals n (% of total)	1	2	3	4	5	6	7	8	9	10
			1 (6%)				1 (6%)	2 (13%)	1 (6%)	11 (69%)

	Lack of Ideas	Time Barriers	Family Preferences	Other
Barriers to Family Meals n (% of total)	3 (19%)	11 (69%)	1 (6%)	1 (6%)

Based on the results of the needs assessment survey, the lesson topics and program goals were developed to address the barriers to family meals and the topics preferred in a nutrition education and cooking program for families described by the parents at SFC (Table 2). The first lesson plan introduced the idea of increasing the frequency and quality of family meals as this was the main theme of the Simple Suppers program. Lesson topics two through six were derived directly from the DG and MyPyramid. Specifically, they focused on increasing the consumption of fruits and vegetables, whole grains, calcium rich foods and beverages, lean protein, and unsaturated fats. Lesson seven concluded the program by addressing the topic of eating breakfast daily, as advised by the American Pediatric Association ECGs.

Table 2. Simple Suppers Program Topics and Goals

Session Number	Date	Session Title	Program Goal
1	November 18, 2010	What's for Dinner Tonight?	Increase frequency and quality of family meals
2	December 16, 2010	Vary your Veggies, Focus on Fruit	Increase consumption of fruits and vegetables
3	January 19, 2011	Make Half your Grains Whole	Increase consumption of whole grains
4	February 16, 2011	Build Strong Bones	Increase consumption of calcium rich foods and beverages
5	March 30, 2011	Go Lean with Protein	Increase consumption of lean protein
6	April 20, 2011	Go Low on Fat	Decrease consumption of saturated fats and Increase consumption of unsaturated fats
7	May 18, 2011	Eat Breakfast, Fuel Up!	Increase frequency and quality of breakfast meals

To assess the feasibility of the program, we recorded attendance data at the individual and family level for each session. We had an average of 10 families attend the program each month (Table 3). We had the highest attendance at the first session with 18 families. Throughout the course of the winter months, the attendance rate decreased, even with increased advertisement efforts. During the spring season, on average, attendance increased to 9 families.

Table 3. Monthly Family Attendance Data for the Simple Suppers Program		
Date	**Session Title**	**Attendance**
November 18, 2010	What's for Dinner Tonight?	18 families
December 16, 2010	Vary your Veggies, Focus on Fruit	9 families
January 19, 2011	Make Half your Grains Whole	11 families
February 16, 2011	Build Strong Bones	7 families
March 30, 2011	Go Lean with Protein	9 families
April 20, 2011	Go Low on Fat	9 families
May 18, 2011	Eat Breakfast, Fuel Up!	8 families

To assess the acceptability of the SS program, we evaluated the parents' satisfaction level with the program, as well as their perception of their child's satisfaction with the program. Both parents and children reported high satisfaction with the program (Table 4). Specifically, after the first session, all parents (100%) reported that they were either satisfied or very satisfied, and most (84%) reported that they perceived the child enjoyed the program. The level of satisfaction did not change remarkably from baseline to midway to end. In general, we found the participants were pleased with the SS program.

Table 4. Parents and Children Report High Satisfaction with Simple Suppers Program				
Audience				
	Very Unsatisfied	**Unsatisfied**	**Satisfied**	**Very Satisfied**
Parents (n=19)	0%	0%	42%	58%
	Enjoyed Program	**Did Not Enjoy Program**	**Not Sure**	
Children (n=18)	84%	0%	16%	

Conclusions

In accordance with the needs assessment survey, we confirmed parents value the importance of family meals, yet they find many barriers to preparing and eating family meals at home. The attendance data and satisfaction data verified that a nutrition education and cooking program targeted to preschoolers and their parents is both feasible and acceptable. Results from this study suggest that an innovative, hands-on nutrition education and healthy cooking class designed with sensitivity to the demands of families with young children and delivered in a convenient setting has high potential to effectively engage its target audience of parents and preschool-aged children. However,future research is needed to test potential efficacy of the program in eliciting positive changes in the food choices and eating behaviors of young children, and ultimately, reduced risk of inappropriate weight gain in children.

References

Bandura A. Social Foundation of Thought and Action: A Social Cognitive Theory. Prentice-Hall: Englewood Cliffs, NJ, 1986.

Barlow SE, Expert Committee. Expert Committee Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity: Summary Report. AAP - Journal of the American Academy of Pediatrics. Nov 2007;120 (2007): S164-192.

Birch, LL. (1990) Development of food acceptance patterns. Developmental Psychology. 26:515-519.

Daniels, SR. et al. American Heart Association Childhood Obesity Research Summit Report. 119 (2009): E489-517. American Heart Association, Inc.

Dwyer J, Suitor C, Hendricks K. (2004) FITS: new insights and lessons learned. J Am Diet Assoc. 104:S5-7.

Fulkerson JA, Nelson MC, Lytle L, Moe S, Heitzler C, Pasch KE. (2008) The validation of a home food inventory. Int J Behav Nutr Phys Act. 5:55.

Fulkerson JA, Rydell S, Kubik MY, Lytle L, Boutelle K, Story M, Neumark-Sztainer DN, Dudovitz B, Garwick A. (2010) Healthy Home Offerings via the Meatltime Environment (HOME): Feasibility, Acceptbility, and Outcomes of a Pilot Study. Obesity. 18:S69-74.

Gillman MW, Rifas0Shiman SL, Frazier LA, Rockett HRH, Camargo CA, Field AE, Berkey CS, Colditz GA. (2000) Family dinner and diet quality among older children and adolescents. Arch Fam 9:235-240.

Hoerr S, Utech AE, Ruth E. (2005) Child control of food choices in Head Start families. J NutrEducBehav. 37:185-190.

Johnson RK, Driscoll P, Goran MI. (1996) Comparison of multiple-pass 24-hour recall estimates of energy intake with total energy expenditure determined by the doubly labeled water method in young children. J Am Diet Assoc. 96:1140–1144.

Kral TV, Rauh EM. (2010) Eating behaviors of children in the context of their family environment. Physiol Behav. 100:567-573.

Nutrition Education Network of Washington. Take 5 for a Nutrition Update. Volume 13, Number 3, January 2008. Accessed from: http://nutrition.wsu.edu/take5/08/200801.pdf.

Ogden C, Carroll M. Prevalence of Obesity among Children and Adolescents: United States, Trends 1963-1965 through 2007-2008. Centers for Disease Control and Prevention. National Center for Health Statistics, June 2010.

Pennywitt JS, Gunther CW, Failla ML, Murray R. Happy Healthy Preschoolers: Evidence-based Community Childhood Obesity Prevention Program. Presented at USDA MSP Annual Project Directors Meeting, October 2009.

Reilly JJ. (2008) Physical activity, sedentary behaviour and energy balance in the preschool child: opportunities for early obesity prevention. Proc Nutr Soc. 67:317-325.

Savage JS, Fisher JO, Birch LL. (2007) Parental influence on eating behavior: conception to adolescence. J Law Med Ethics. 35:22-34.

Videon TM. (2003) Influences on adolescent eating patterns: the importance of family meals. Journal of Adolescent Health. 32.5:365-73.